

### REMARKS/ARGUMENTS

#### Rejections to claims 1-6 and 13-18: 35 USC 103(a)

The Examiner rejected independent claims 1 and 13 as being obvious in view of U.S. Patent No. 4,171,765 (Lemone) and U.S. Patent No. 6,928,607 (Loaiza). The Examiner acknowledges that Lemone does not teach the claimed features whereby

*a first check word is stored in a write accumulator;*

*a second check word is stored in a read accumulator; and*

*a compare circuit is connected to the write accumulator and the read accumulator for comparing the first check word to the second check word.*

The Examiner states that Loaiza teaches that the first and the second check words are not stored within the nonvolatile memory, thus reducing the "overhead" space in memory. The Examiner believes that by not storing checksum values in the nonvolatile memory, as taught by Loaiza, a person skilled in the art would be motivated to incorporate these teachings into Lemone, to arrive at the claimed system having buffers that store a first check word and a second check word, with a compare circuit connected to both buffers for comparing the first check word to the second check word.

Applicant respectfully disagrees, and submits that claims 1 and 13 is not obvious in view of Loaiza and Lemone. Applicant submits that a person skilled in the art would not be motivated to modify Lemone with the teachings of Loaiza, as Loaiza does store the checksum value in nonvolatile memory. Furthermore, Applicant submits that the combination of Loaiza and Lemone fails to disclose or infer all the limitations recited in claims 1 and 13.

Applicant respectfully notes that the test for determining obviousness of a claim as outlined in MPEP 706.02(j) stipulates three basic criteria which must be met. One criteria being that "*there must be some suggestion or motivation, either in the references themselves...to modify the reference or to combine reference teachings.*" A second criteria being that "*the prior art reference (or references when combined) must teach or suggest all the claim limitations*". Applicant submits that these two criteria are not met by the combination of Loaiza and Lemone.

With respect to the motivation criteria, Applicant submits that Loaiza teaches the storage of a checksum value in the nonvolatile memory. It is presumed that the Loaiza checksum value is analogous to the check word of the present application. Loaiza teaches that a checksum value calculated from a logical operation upon the data to be stored, is stored with the data within the nonvolatile memory. Column 5, lines 34-44 of Laoiza describes the generation of the checksum:

*"In one embodiment, prior to causing a block of data to be written to data storage unit 112, application 204 initiates a physical checksum calculation process 220 to generate a checksum value for inserting into the data block. In one embodiment, to generate the checksum value, a logical operation, such as an XOR or ADD operation is performed on the data that is contained in the data block. Based on the vector that results from performing the logical operation, and a desired checksum constant, a checksum value is selected and inserted into the data block."*

Column 5, lines 59-62 of Laoiza describes the storage of the data block, which includes the calculated checksum, in the nonvolatile memory:

*"Disk controller 206 then communicates with disk array unit 210 via network 108 to cause the data block to be stored on one or more disks 114-118."*

Column 6, lines 3-9 of Laoiza describes verification of data stored in the nonvolatile memory:

*"the logical operation used by physical checksum calculation process 220 is performed on the data block. The results of the logical operation are then compared with the checksum stored with the data block to determine whether the integrity of the data block has been maintained since the physical checksum calculation process 220 was performed."*

In summary, Loaiza discloses a system whereby a first checksum value is calculated from the data before it is written to nonvolatile memory, and is then stored along with the data in the nonvolatile memory. In a readout operation of the data from the nonvolatile memory, a second checksum is calculated from the stored data, and is compared to the first checksum value stored in the nonvolatile memory.

Therefore, the Loaiza system does not reduce overhead space in memory, as the checksum value is stored in the nonvolatile memory with the data. Furthermore, Lemone discloses a similar system to that of Loaiza, where the check word is stored along with the data. Applicant therefore submits that there is no motivation in either Lemone or Loaiza for a person skilled in the art to store the checksum values in buffers in order to reduce the overhead space in memory, since both Loaiza and Lemone store the check word in memory with the data. Accordingly, there would be no motivation to reduce memory storage overhead. Therefore, Applicant submits that the combination of the Loaiza and Lemone teachings would not result in the claimed invention.

With respect to the teaching of all the claim limitations, Applicant submits that the claim limitations of the first check word being stored in the write accumulator, the second check word being stored in the read accumulator, and the compare circuit connected to both the read and write accumulators, is not disclosed or inferred in Loaiza. As discussed above, Loaiza stores a first checksum value in the nonvolatile memory with the data, and calculates a second checksum value, which is compared to the first checksum value. Nowhere does Loaiza state or infer that the second checksum value is stored in a buffer or any element analogous to the claimed read accumulator. Accordingly, Loaiza does not disclose a comparator connected to the second checksum buffer.

Therefore, for the reasons outlined above, Applicant submits that claims 1 and 13 are not obvious, and withdrawal of the Examiner's rejection under 35 USC 103(a). In view of the non-obviousness of claims 1 and 13, Applicant submits that claims 2-6 and 14-18, which depend either directly or indirectly from claims 1 and 13, are also not obvious.

Rejections to claims 7 and 8: 35 USC 103(a)

The Examiner rejected dependent claims 7 and 8 as being obvious in view of Lemone, Loaiza and U.S. Patent No. 6,388,920 (Katayama). Applicant submits that claims 7 and 8, being indirectly dependent upon claim 1, are non-obvious in view of the established non-obviousness of claim 1, as argued by the Applicant. Therefore, withdrawal of the Examiner's rejection of claims 7 and 8 under 35 USC 103(a) is respectfully requested.

Rejections to claims 11-12 and 21-26: 35 USC 103(a)

The Examiner rejected claims 11-12 and 21-26 as being obvious in view of Lemone, Loaiza and Katayama. Claims 11 and 21 recite the same three features earlier acknowledged by the Examiner as being absent in Lemone:

*a first check word is stored in a write accumulator;*

*a second check word is stored in a read accumulator; and*

*a compare circuit is connected to the write accumulator and the read accumulator for comparing the first check word to the second check word.*

Therefore, the arguments presented by the Applicant with respect to the non-obviousness of claims 1 and 13 apply equally to claims 11 and 21. Accordingly, Applicant submits that claims 11 and 21, and dependent claims 12 and 22-26, are not obvious in view of Lemone, Loaiza and Katayama. Therefore, withdrawal of the Examiner's rejection under 35 USC 103(a) is respectfully requested.

In summary, independent claims 1, 11, 13 and 21 recite the same limitations, which are not found in any of the cited references, either alone or in combination. Applicant has further argued that there is no motivation to combine the teachings of Loaiza with Lemone in order to arrive at the claimed invention, as the combination of Loaiza and Lemone teachings could not result in the claimed invention.

We believe no fee is required. However, if a fee is due, the Commissioner is hereby authorized to charge any additional fees, and credit any overpayments to Deposit Account No. 501593, in the name of Borden Ladner Gervais LLP.

Applicant submits that the application is now in condition for allowance, and favorable action to that end is respectfully requested.

Respectfully submitted,

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